

## RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/576,906  
Source: IFWO  
Date Processed by STIC: 2/20/07

# ***ENTERED***



IFWO

## RAW SEQUENCE LISTING

DATE: 02/20/2007

PATENT APPLICATION: US/10/576,906

TIME: 14:53:50

Input Set : A:\19781.seq.txt

Output Set: N:\CRF4\02152007\J576906.raw

3 <110> APPLICANT: BARTHOLOMEUSZ, Angeline; Ingrid  
 4 LOCARNINI, Stephen, Alister  
 5 AYRES, Anna  
 6 YUEN, Lilly, Ka, Wai  
 7 SASADEUSZ, Joseph, John  
 9 <120> TITLE OF INVENTION: HBV VARIANTS DETECTION AND APPLICATION  
 11 <130> FILE REFERENCE: 19781  
 13 <140> CURRENT APPLICATION NUMBER: 10/576,906  
 14 <141> CURRENT FILING DATE: 2006-04-21  
 16 <150> PRIOR APPLICATION NUMBER: AU2003905776  
 17 <151> PRIOR FILING DATE: 2003-10-21  
 19 <150> PRIOR APPLICATION NUMBER: AU2004900962  
 20 <151> PRIOR FILING DATE: 2004-02-25  
 22 <160> NUMBER OF SEQ ID NOS: 42  
 24 <170> SOFTWARE: PatentIn version 3.2  
 26 <210> SEQ ID NO: 1  
 27 <211> LENGTH: 1007  
 28 <212> TYPE: DNA  
 29 <213> ORGANISM: hepatitis B virus  
 31 <400> SEQUENCE: 1  
 32 gcttccacca atcggcaggc aggaagacag cctactccca tctctccacc tctaagagac 60  
 34 agtcacctc aggccatgca gtggaactcc agcacattcc accatgctct gctagatccc 120  
 36 agacctgctg gtggctccag ttccggaaca gtaaaccctg ttccgactac tgcctctccc 180  
 38 atatcgtaaa tcttctcgag gactggggac cctgcgccga atatggagag caccacatca 240  
 40 ggattcctag gaccctgctc cgtgttacag gcgggggttt tcttggtgac aagaatcctc 300  
 42 acaataccaa agagtctaga ctcggtggtg acttctctca attttctagg gggagcacc 360  
 44 acgtgtcctg gccaaaattt gcagtcacca acctccaatc actcaccaac ctcttgctc 420  
 46 ccaatttgct ctgggttatc ctggatgtgt ctgcggcggt ttatcatctt cctcttcac 480  
 48 ctgctgctat gctcatctt cttgttggtt cttctggact accaaggat gttgcccggt 540  
 50 tgcctcttac ttccaggaac atcaactacc agcacgggac catgcaagac ctgcacgact 600  
 52 cctgctcaag gaacctctat gtttccctct tgttgctgta caaaaccttc ggacggaaat 660  
 54 tgcacttgta ttcccatccc atcatcttg gctttcgtaa gattcctat ggagtgggccc 720  
 56 tcagtcctgt tctcctggtt cagtttacta gtgccatttg ttcagtgggt cgtagggcct 780  
 58 tccccactg tttggctttc agttatatgg atgatgtggt attggggggc aagtctgtac 840  
 60 aacatcttga atccctttat accgctatta ccaattttct tttgtctttg ggtatacatt 900  
 62 taaaccctaa taaaaccaag cgttggggct actcccttaa cttcatggga tatgtaattg 960  
 64 gaagttgggg taccttgcca caggaacata ttgtacaaaa aatcaaa 1007  
 67 <210> SEQ ID NO: 2  
 68 <211> LENGTH: 270  
 69 <212> TYPE: PRT  
 70 <213> ORGANISM: hepatitis B virus  
 72 <400> SEQUENCE: 2  
 74 Glu Asp Trp Gly Pro Cys Ala Glu Tyr Gly Glu His His Ile Arg Ile

(pg. 6)

## RAW SEQUENCE LISTING

DATE: 02/20/2007

PATENT APPLICATION: US/10/576,906

TIME: 14:53:50

Input Set : A:\19781.seq.txt

Output Set: N:\CRF4\02152007\J576906.raw

```

75 1          5          10          15
78 Pro Arg Thr Pro Ala Arg Val Thr Gly Gly Val Phe Leu Val Asp Lys
79          20          25          30
82 Asn Pro His Asn Thr Lys Glu Ser Arg Leu Val Val Asp Phe Ser Gln
83          35          40          45
86 Phe Ser Arg Gly Ser Thr His Val Ser Trp Pro Lys Phe Ala Val Pro
87          50          55          60
90 Asn Leu Gln Ser Leu Thr Asn Leu Leu Ser Ser Asn Leu Ser Trp Leu
91 65          70          75          80
94 Ser Leu Asp Val Ser Ala Ala Phe Tyr His Leu Pro Leu His Pro Ala
95          85          90          95
98 Ala Met Pro His Leu Leu Val Gly Ser Ser Gly Leu Pro Arg Tyr Val
99          100          105          110
102 Ala Arg Leu Ser Ser Thr Ser Arg Asn Ile Asn Tyr Gln His Gly Thr
103          115          120          125
106 Met Gln Asp Leu His Asp Ser Cys Ser Arg Asn Leu Tyr Val Ser Leu
107          130          135          140
110 Leu Leu Leu Tyr Lys Thr Phe Gly Arg Lys Leu His Leu Tyr Ser His
111 145          150          155          160
114 Pro Ile Ile Leu Gly Phe Arg Lys Ile Pro Met Gly Val Gly Leu Ser
115          165          170          175
118 Pro Phe Leu Leu Val Gln Phe Thr Ser Ala Ile Cys Ser Val Val Arg
119          180          185          190
122 Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr Met Asp Asp Val Val
123          195          200          205
126 Leu Gly Ala Lys Ser Val Gln His Leu Glu Ser Leu Tyr Thr Ala Ile
127          210          215          220
130 Thr Asn Phe Leu Leu Ser Leu Gly Ile His Leu Asn Pro Asn Lys Thr
131 225          230          235          240
134 Lys Arg Trp Gly Tyr Ser Leu Asn Phe Met Gly Tyr Val Ile Gly Ser
135          245          250          255
138 Trp Gly Thr Leu Pro Gln Glu His Ile Val Gln Lys Ile Lys
139          260          265          270
142 <210> SEQ ID NO: 3
143 <211> LENGTH: 226
144 <212> TYPE: PRT
145 <213> ORGANISM: hepatitis B virus
147 <400> SEQUENCE: 3
149 Met Glu Ser Thr Thr Ser Gly Phe Leu Gly Pro Leu Leu Val Leu Gln
150 1          5          10          15
153 Ala Gly Phe Phe Leu Leu Thr Arg Ile Leu Thr Ile Pro Lys Ser Leu
154          20          25          30
157 Asp Ser Trp Trp Thr Ser Leu Asn Phe Leu Gly Gly Ala Pro Thr Cys
158          35          40          45
161 Pro Gly Gln Asn Leu Gln Ser Pro Thr Ser Asn His Ser Pro Thr Ser
162          50          55          60
165 Cys Pro Pro Ile Cys Pro Gly Tyr Arg Trp Met Cys Leu Arg Arg Phe
166 65          70          75          80
169 Ile Ile Phe Leu Phe Ile Leu Leu Leu Cys Leu Ile Phe Leu Leu Val

```

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/576,906

DATE: 02/20/2007

TIME: 14:53:50

Input Set : A:\19781.seq.txt

Output Set: N:\CRF4\02152007\J576906.raw

```

170          85          90          95
173 Leu Leu Asp Tyr Gln Gly Met Leu Pro Val Cys Pro Leu Leu Pro Gly
174          100          105          110
177 Thr Ser Thr Thr Ser Thr Gly Pro Cys Lys Thr Cys Thr Thr Pro Ala
178          115          120          125
181 Gln Gly Thr Ser Met Phe Pro Ser Cys Cys Cys Thr Lys Pro Ser Asp
182          130          135          140
185 Gly Asn Cys Thr Cys Ile Pro Ile Pro Ser Ser Trp Ala Phe Val Arg
186 145          150          155          160
189 Phe Leu Trp Glu Trp Ala Ser Val Arg Phe Ser Trp Phe Ser Leu Leu
190          165          170          175
193 Val Pro Phe Val Gln Trp Phe Val Gly Leu Ser Pro Thr Val Trp Leu
194          180          185          190
197 Ser Val Ile Trp Met Met Trp Tyr Trp Gly Pro Ser Leu Tyr Asn Ile
198          195          200          205
201 Leu Asn Pro Phe Ile Pro Leu Leu Pro Ile Phe Phe Cys Leu Trp Val
202          210          215          220
205 Tyr Ile
206 225
209 <210> SEQ ID NO: 4
210 <211> LENGTH: 982
211 <212> TYPE: DNA
212 <213> ORGANISM: hepatitis B virus
214 <400> SEQUENCE: 4
215 tctgtctcca cttttgagag acactcatcc tcaggccatg cagtggaaact ccacaacctt      60
217 ccaccaaact ctgcaagatc ccagagtggag aggcctgtat ttccctgctg gtggctccag      120
219 ttcaggaaca gtaaaccctg ttccgacttc tgtctctcac acatcgtaa tcttctcgag      180
221 gattggggtc cctgcgctga acatggagaa catcacatca ggattcctag gacccctgct      240
223 cgtgttacag gcgggggttt tcttgttgac aagaatcctc acaataccgc agagtctaga      300
225 ctcggtgtgg acttctctca attttctagg gggaactacc gtgtgtcttg gccaaaattc      360
227 gcagtcacca acctccaatc actcaccaac ctctgtcctc ccaacttgct ctggttatcg      420
229 ctggatgtat ctgcggcggt ttatcatctt cctcttcac ctgctgctat gcctcatctt      480
231 ctgtgtgggt cttctggggt atcaagggtat gttgccggtt tgtcctctaa ttccaggatc      540
233 ttcaaccacc agcacgggac catgcagaac ctgcacgact cctgctcaag gaaactctat      600
235 gtatccctcc tgttgctgta ccaaaccctc ggacggaaat tgcacctgta ttcccatccc      660
237 atcatcctgg gctttcggaa aattcctatg ggagtgggcc tcagcccgtt tctcctggct      720
239 cagtttacta gtgccatttg ttcagtgggt cgtagggcct tccccactg tttggctttc      780
241 agttatatgg atgatgtggt attgggggcc aagtctgtat cgcattctga gtcccttttt      840
243 accgctgtta ccaattttct tttgtctttg ggtatacatt taaaccctca caaaacaaaa      900
245 agatggggtc actctttaca tttcatgggc tatgtcattg gatgttatgg gtcattgcca      960
247 caagatcaca tcagacagaa aa
250 <210> SEQ ID NO: 5
251 <211> LENGTH: 268
252 <212> TYPE: PRT
253 <213> ORGANISM: hepatitis B virus
255 <400> SEQUENCE: 5
257 Glu Asp Trp Gly Pro Cys Ala Glu His Gly Glu His His Ile Arg Ile
258 1          5          10          15
261 Pro Arg Thr Pro Ala Arg Val Thr Gly Gly Val Phe Leu Val Asp Lys

```

## RAW SEQUENCE LISTING

DATE: 02/20/2007

PATENT APPLICATION: US/10/576,906

TIME: 14:53:50

Input Set : A:\19781.seq.txt

Output Set: N:\CRF4\02152007\J576906.raw

```

262          20          25          30
265 Asn Pro His Asn Thr Ala Glu Ser Arg Leu Val Val Asp Phe Ser Gln
266          35          40          45
269 Phe Ser Arg Gly Asn Tyr Arg Val Ser Trp Pro Lys Phe Ala Val Pro
270          50          55          60
273 Asn Leu Gln Ser Leu Thr Asn Leu Leu Ser Ser Asn Leu Ser Trp Leu
274 65          70          75          80
277 Ser Leu Asp Val Ser Ala Ala Phe Tyr His Leu Pro Leu His Pro Ala
278          85          90          95
281 Ala Met Pro His Leu Leu Val Gly Ser Ser Gly Leu Ser Arg Tyr Val
282          100         105         110
285 Ala Arg Leu Ser Ser Asn Ser Arg Ile Phe Asn His Gln His Gly Thr
286          115         120         125
289 Met Gln Asn Leu His Asp Ser Cys Ser Arg Lys Leu Tyr Val Ser Leu
290          130         135         140
293 Leu Leu Leu Tyr Gln Thr Phe Gly Arg Lys Leu His Leu Tyr Ser His
294 145          150         155         160
297 Pro Ile Ile Leu Gly Phe Arg Lys Ile Pro Met Gly Val Gly Leu Ser
298          165         170         175
301 Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile Cys Ser Val Val Arg
302          180         185         190
305 Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr Met Asp Asp Val Val
306          195         200         205
309 Leu Gly Ala Lys Ser Val Ser His Leu Glu Ser Leu Phe Thr Ala Val
310          210         215         220
313 Thr Asn Phe Leu Leu Ser Leu Gly Ile His Leu Asn Pro His Lys Thr
314 225          230         235         240
317 Lys Arg Trp Gly His Ser Leu His Phe Met Gly Tyr Val Ile Gly Cys
318          245         250         255
321 Tyr Gly Ser Leu Pro Gln Asp His Ile Arg Gln Lys
322          260         265
325 <210> SEQ ID NO: 6
326 <211> LENGTH: 226
327 <212> TYPE: PRT
328 <213> ORGANISM: hepatitis B virus
330 <400> SEQUENCE: 6
332 Met Glu Asn Ile Thr Ser Gly Phe Leu Gly Pro Leu Leu Val Leu Gln
333 1          5          10          15
336 Ala Gly Phe Phe Leu Leu Thr Arg Ile Leu Thr Ile Pro Gln Ser Leu
337          20          25          30
340 Asp Ser Trp Trp Thr Ser Leu Asn Phe Leu Gly Gly Thr Thr Val Cys
341          35          40          45
344 Leu Gly Gln Asn Ser Gln Ser Pro Thr Ser Asn His Ser Pro Thr Ser
345          50          55          60
348 Cys Pro Pro Thr Cys Pro Gly Tyr Arg Trp Met Tyr Leu Arg Arg Phe
349 65          70          75          80
352 Ile Ile Phe Leu Phe Ile Leu Leu Leu Cys Leu Ile Phe Leu Leu Val
353          85          90          95
356 Leu Leu Asp Tyr Gln Gly Met Leu Pro Val Cys Pro Leu Ile Pro Gly

```

## RAW SEQUENCE LISTING

DATE: 02/20/2007

PATENT APPLICATION: US/10/576,906

TIME: 14:53:50

Input Set : A:\19781.seq.txt

Output Set: N:\CRF4\02152007\J576906.raw

```

357          100          105          110
360 Ser Ser Thr Thr Ser Thr Gly Pro Cys Arg Thr Cys Thr Thr Pro Ala
361          115          120          125
364 Gln Gly Asn Ser Met Tyr Pro Ser Cys Cys Cys Thr Lys Pro Ser Asp
365          130          135          140
368 Gly Asn Cys Thr Cys Ile Pro Ile Pro Ser Ser Trp Ala Phe Gly Lys
369 145          150          155          160
372 Phe Leu Trp Glu Trp Ala Ser Ala Arg Phe Ser Trp Leu Ser Leu Leu
373          165          170          175
376 Val Pro Phe Val Gln Trp Phe Val Gly Leu Ser Pro Thr Val Trp Leu
377          180          185          190
380 Ser Val Ile Trp Met Met Trp Tyr Trp Gly Pro Ser Leu Tyr Arg Ile
381          195          200          205
384 Leu Ser Pro Phe Leu Pro Leu Leu Pro Ile Phe Phe Cys Leu Trp Val
385          210          215          220
388 Tyr Ile
389 225
393 <210> SEQ ID NO: 7
394 <211> LENGTH: 1045
395 <212> TYPE: DNA
396 <213> ORGANISM: hepatitis B virus
398 <400> SEQUENCE: 7
399 cagcagcgcc tcctcctgcc tcctccaatc ggcagtcagg aagacagcct actcccatct      60
401 ctccacctct aagagacagt catcctcagg ccatgcagtg gaactccagc acattccacc      120
403 aagctctgct agatcccaga gtgagggggcc tatattttcc tgctgggtggc tccagttccg      180
405 gaacagtaaa ccctgttccg actactgcct ctcccatatc gtcaatcttc tcgaggactg      240
407 gggaccctgc accgaacatg gagagcacca catcaggatt cctaggaccc ctgctcgcgt      300
409 tacaggcggg gtttttcttg ttgacaagaa tcctcacaat accacagagt ctagactcgt      360
411 ggtggacttc tctcaatttt ctagggggaa cacccaagtg tcctggccaa aatttgcagt      420
413 ccccaacctc caatcactca ccaacctctt gtccctccat ttgtcctggg tatcgttgga      480
415 tgtgtctgcg gcgttttatc atcttcctct ccatcctgct gctatgcctc atcttcttgt      540
417 ggggtcttct ggactaccaa ggtatgttgc ccgtttgtcc tctacttcca ggaacatcaa      600
419 ctaccagcac gggaccatgc aagacctgca cgactcctgc tcaaggaacc tctatgtttc      660
421 cctcttgttg ctgtacaaaa ccttcggacg gaaattgcac ttgtattccc atcccatcat      720
423 cttgggcttt cgcaagattc ctatgggagt gggcctcagt ccgtttctcc tggctcagtt      780
425 tactagtgcc atttgttcag tggttcgtag ggctttcccc cactgtttgg cttttagtta      840
427 tatggatgat gtggtattgg gggccaagtc tgtacaacay cttgaatccc tttttaccgc      900
429 tgttaccaat tttcttttgt ctttgggtat acatttaaac cctactaaaa ccaaactgtg      960
431 gggctactcc cttaacttca tgggatatgt aattggaagt tggggtacct taccacaaga     1020
433 acatattgta cacaaaatca gacaa                                     1045
436 <210> SEQ ID NO: 8
437 <211> LENGTH: 271
438 <212> TYPE: PRT
439 <213> ORGANISM: hepatitis B virus
441 <400> SEQUENCE: 8
443 Glu Asp Trp Gly Pro Cys Thr Glu His Gly Glu His His Ile Arg Ile
444 1          5          10          15
447 Pro Arg Thr Pro Ala Arg Val Thr Gly Gly Val Phe Leu Val Asp Lys
448          20          25          30

```

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/10/576,906

DATE: 02/20/2007  
TIME: 14:53:51

Input Set : A:\19781.seq.txt  
Output Set: N:\CRF4\02152007\J576906.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:9; Xaa Pos. 208  
Seq#:12; Xaa Pos. 172  
Seq#:14; Xaa Pos. 288  
Seq#:15; Xaa Pos. 298,300  
Seq#:27; Xaa Pos. 160  
Seq#:30; Xaa Pos. 95  
Seq#:32; Xaa Pos. 312  
Seq#:33; Xaa Pos. 309,327  
Seq#:38; Xaa Pos. 115,147,239  
Seq#:39; Xaa Pos. 134,148,240  
Seq#:41; Xaa Pos. 247  
Seq#:42; Xaa Pos. 142,247

## VERIFICATION SUMMARY

DATE: 02/20/2007

PATENT APPLICATION: US/10/576,906

TIME: 14:53:51

Input Set : A:\19781.seq.txt

Output Set: N:\CRF4\02152007\J576906.raw

L:572 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:192  
L:755 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:160  
L:895 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:272  
L:997 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:288  
L:1689 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:144  
L:1844 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30 after pos.:80  
L:2016 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32 after pos.:304  
L:2122 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:33 after pos.:304  
M:341 Repeated in SeqNo=33  
L:2405 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 after pos.:112  
M:341 Repeated in SeqNo=38  
L:2508 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39 after pos.:128  
M:341 Repeated in SeqNo=39  
L:2656 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:240  
L:2722 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42 after pos.:128  
M:341 Repeated in SeqNo=42